REMARKS

Claim 1 is amended to more particularly point out that the adsorption member comprises a porous layer adjacent the adsorption layer, and that the adsorption layer is cylindrical and has a cross-section wherein the layers are arranged in a helical geometry; as shown in Figs. 3, 5 and 6, described at paragraphs 0025 and 0026, and originally recited in claim 8, now cancelled. Dependent claim 2 is amended to more particularly point out that the adsorption layer and the porous layer form alternating layers along a diameter of the cross-section, as shown in Fig. 6 and described at paragraph 0026. Claims 3-7 are amended to refer to the adsorption layer and the porous layer consistent with claim 1. Claim 10 is amended similar to claim 1 to call for an adsorption layer and a porous layer arranged in a helical geometry. Dependent claim 11 is amended to refer to the adsorption member consistent with claim 10. Dependent claim 12 is amended to more particularly point out that the adsorption layer and the porous layer form alternating layers along the diameter, similar to the amendment to claim 2. Claims 13-17 are amended to refer to the adsorption layer and the porous layer in claim 10, upon which they are dependent. Claim 20 is amended to more particularly point out that the method includes disposing a porous layer adjacent the adsorption layer and rolling the layers to form a cylindrical component, as described at paragraph 0026.

Changes to Specification and Claims

As suggested in the Action, grammatical and typographical errors are corrected in the specification. In particular, paragraph 0005 is corrected to read "to protect."

Paragraphs 0023 and 0039 are corrected read "where." Paragraph 0038 is amended to read "incorporated in," and to correct "from."

Also, paragraph 0025 is amended for consistency in referring to adsorption member 116 and adsorption component 118. The claims are similarly amended to be consistent in referring to the adsorption member and the adsorption layer.

In view of the amendments, it is requested that the objections be withdrawn.

Claim Rejection under 35 USC § 112

Claims 13 and 15-17 were rejected under35 USC § 112 as indefinite in referring to the adsorption layer and the porous layer. The claims have been amended to be consistent in referring to the layers. Therefore, it is requested that the rejection be withdrawn.

Claim Rejection under 35 USC § 103

Claims 1, 10, 11, 13, 16 and 20 were rejected under 35 U.S.C. § 102(b) as anticipated by United States Patent No. 6,454,834, issued to Livingstone et al. in 2002. Claims 2-4, 6, 7, 14, 17, and 21 were rejected under 35 U.S.C. § 103 as unpatentable over Livingstone et al. in view of United States Patent No. 4,259,096, issued to Nakamura et al. in 1981. Claims 5 and 15 were rejected under 35 U.S.C. § 103 as unpatentable over Livingstone et al. in view of Nakamura et al., and further in view of United States Patent No. 5,641,344, issued to Takahashi et al. in 1997. Claims 8, 18 and 22, now cancelled,

were rejected under 35 U.S.C. § 103 as unpatentable over Livingstone et al. in view of Nakamura et al., and further in view of United States Patent No. 4,248,736, issued to Fuchigami et al. in 1981.

In view of the amendments to the independent claims 1, 10 and 20, it is believed that the rejections may be fully addressed together.

Livingstone et al., the primary reference, describes air cleaning device that is adapted for cleaning air in a confined space, col. 2, lines 55-58, and col. 3, lines 4-12. For this purpose, Livingstone et al. provides a carbon fiber sheet 8 that, while pleated, is spread along a plane. Moreover, Livingstone et al. contemplates use with a fan, for example, fan 38 in Fig. 6, in order to force large volumes of air perpendicularly through the sheet for treatment. In contrast, Applicants' invention is mainly intended for venting a fuel tank to compensate for diurnal changes in ambient pressure and temperature, see paragraph 0001. This venting is characterized by slow migration of high concentrations of hydrocarbon vapors, particularly as compared to the fan-assisted air treatment in Livingstone et al. In accordance with Applicants' invention, an activated carbon textile may be used for this purpose when rolled with a porous layer in a helical arrangement. The porous layer provides a suitable gas flow path for venting purposes, whereas the helical arrangement provides an extended contact with the adjacent textile material for adsorption purposes. Moreover, Applicants' device is readily manufactured from the carbon textile by rolling the layers together. In Livingstone et al., the generally flat sheet, with perpendicular air flow, particularly in the high volume contemplated, provide quick

air flow through the sheet and limited contact with the carbon material. Thus, Livingstone et al. does not point to a helical structure with the carbon textile and so doe not anticipate, or even suggest, Applicants' device.

Nakamura et al. describes an air cleaner element of the type that mounts onto a carburetor of an internal combustion engine, col. 2, lines 50-51. The air cleaner element comprises a fabric or paper medium 13 and activated carbon fibers 14, col. 2, lines 56-60. The pleated element is generally circular and allows radial air flow. Like Livingstone et al., Nakamura et al. contemplates air flow generally perpendicular to the carbon fiber layer. In contrast, because of the helical adsorption member in Applicants' invention, vapor flow through the porous layer is parallel to the carbon textile, as opposed to through the layer. Nothing in Nakamura et al. suggests a rolled structure comprising a helical arrangement of the porous layer and the activated carbon layer. Thus, even combined, the references do not lead the practitioner to Applicants' device.

Nor do the secondary references point to the features of Applicants' invention. Takahashi et al. is applied to should a porous layer made from polyurethane foam. However, Takahashi et al. uses a bed of carbon particles, and so does not teach or suggest a device formed with a layer of carbon textile material. Fuchigami et al. describes a blood purifier, as opposed to a gas treatment device. While Fuchigami et al. uses a rolled carbon cloth, it lacks a porous layer, in part because such is not needed for the particular blood purification, and also because the blood is pumped perpendicular to the cloth, col. 7, lines 5-9, and so does not need a porous path to promote venting, as in Applicants'

application. Thus, even if combined with the primary and secondary references, these do not point the practitioner to a rolled, helical arrangement of carbon textile and porous layers as in Applicants' device.

Claim 1 is directed to Applicants' evaporative emission treatment device that includes an adsorption member comprising an adsorption layer and a porous layer. The adsorption layer is composed of a carbon textile. The cross-section of the adsorption layer and a porous layer are arranged with a helical geometry. Livingstone et al. and Nakamura et al. provide pleated sheets that are planar or circular to allow ready air flow perpendicular to the sheet. Nor do Takahashi et al. or Fuchigami et al. show a helical structure with alternating porous and adsorption layers. Thus, even if combined, the references do not point the practitioner to Applicants' device in claim 1.

Claims 2-7 are dependent upon claim 1 and so not taught or suggested by the references at least for the reasons set forth with regard to that claim.

Claim 10 is directed to Applicants' evaporative emission treatment device that includes an adsorption member comprising an adsorption layer of an activated carbon textile and a porous layer, which layers are arranged in a helical geometry, features similar to claim 1. For the reasons above, the references do not teach or suggest Applicants' device in claim 10, or in claims 11-17 dependent thereon.

Claim 20 is directed to Applicants' method that includes forming adjacent adsorption and porous layers, and rolling them to form an adsorption member wherein the

layers are arranged in a helical geometry. For the reasons above, the references do not teach or suggest Applicants' method in claim 20.

Accordingly, it is respectfully requested that the rejection of the claims based upon Livingstone et al., alone or in combination with Nakamura et al., Takahashi et al. or Fuchigami et al., be reconsidered and withdrawn, and that the claims be allowed.

Conclusion

It is believed, in view of the amendments and remarks herein, that all grounds of rejection of the claims have been addressed and overcome, and that all claims are in condition for allowance. If it would further prosecution of the application, the Examiner is urged to contact the undersigned at the phone number provided.

The Commissioner is hereby authorized to charge any fees associated with this communication to Deposit Account No. 50-0831.

Respectfully submitted,

Douglas D. Fekete
Reg. No. 29,065
Delphi Technologies, Inc.
Legal Staff – M/C 480-410-202
P.O. Box 5052
Troy, Michigan 48007-5052

(248) 813-1210